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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,335	09/06/2001	Wolfgang Ruehle	10191/1885	3267

26646 7590 09/09/2003  
KENYON & KENYON  
ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER
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BUI, THACH H

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/857,335

Applicant(s)

RUEHLE ET AL.

Examiner

Thach H Bui

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The preliminary amendment filed September 06, 2001 has been received and entered.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 is vague and indefinite because "*one damping element includes a first ring-shaped damping element and a second ring-shaped damping element*" renders the claim unclear.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13-18 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter (U.S. Patent No. 6,520,434).

Reiter teaches a fuel injection valve, comprising a shell, an actuator housing (see Fig. 1), a spring (23), a flange (35), a recess (34) through which the valve needle extends, a valve needle (2), a valve seat surface (col. 2, line 55), a valve closing body that can be activated by one of the piezoelectric actuator and the magnetostrictive actuator via the valve needle and that interacts with the valve seat surface to produce a sealing seat (see Fig. 1). The apparatus also includes at least one damping element (25) (col. 3, lines 48-51) that exhibits an almost static behavior at a high deformation rate and is one elastically deformable (i.e. spring like behavior). The fuel injector comprises a first face (indicated as A) (see Fig. 1) and the second face (indicated as B) of the one of the piezoelectric actuator and the magnetostrictive actuator supported against the shell. Reiter has all the features of the invention but Reiter failed to teach at least one damping element is a plastic e.g. uncured silicone rubber. It would have been obvious to one having ordinary skills in the art at the time the invention was made to manufacture at least one damping element is a plastic e.g. uncured silicone rubber to reduce the manufacturing cost of the fuel injection valve.

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter in view of Wakeman (U.S. Patent No. 5,236,173).

Reiter has all the features of the invention (as mentioned above), but Reiter failed to teach at least one damping element has a ring-shaped. Wakeman teaches a damping element has a ring-shaped damping element (46). It would have been obvious to one having ordinary skills in the art at the time the invention was made to modify the

teachings of Reiter and combine with Wakeman to have a fuel injector comprises at least one damping element having a ring-shaped that continuously brakes the movement of armature and this will prevent or greatly limit the bouncing action of the valve needle.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reiter ('389), Kappel et al., Augustin, Wilmers, Mesenich and Hlousek are cited of general interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thach H Bui whose telephone number is 703-305-0063. The examiner can normally be reached on Monday-Friday, 7:30-4 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mar can be reached on 703-308-2087. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

T.B.  
09/06/03

  
**MICHAEL MAR**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**